

*Acanthophora spicifera*

(Vahl) Børgesen 1910

In the 50 years since its introduction, *A. spicifera* has become one of the most successful and abundant algae on Hawaiian reef flats. It often out competes other reef algae, such as species of *Laurencia* and *Hypnea*.

|          |                     |
|----------|---------------------|
| Division | Rhodophyta          |
| Class    | Rhodophyceae        |
| Order    | Ceramiales          |
| Family   | Rhodomelaceae       |
| Genus    | <i>Acanthophora</i> |



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## IDENTIFYING FEATURES

## DESCRIPTION

Erect plants, to 40 cm tall, with solid cylindrical branches, 2 - 3 mm wide, branched either sparingly to repeatedly. Main branches have short, determinate branches, irregularly shaped and spinose, with spines numerous and radially arranged. There are no spines on main axes. The plant grows from a large, irregularly shaped holdfast.

In intertidal high-motion water areas, *Acanthophora spicifera* has short (4 - 10 cm), compact and very dense thalli. In moderate or low water motion areas, the thalli are tall (10 - 25 cm), more openly branched and occur in scattered clumps.

## COLOR

Highly variable: can be shades of red, purple, yellow, orange, or brown. Are often very dark in color in intertidal, high motion areas. Usually lighter color in shallow areas with low water motion and reflective sandy or silty bottoms.

## HABITAT

*Acanthophora spicifera* is abundant on calm, shallow reef flats, tidepools, and on rocky intertidal benches. This alga usually attaches to hard substrates, such as rocks, basalt ledges, or dead coral heads. It may also be found free-floating, due to its brittle, easily-broken nature.



J. Smith

## STRUCTURAL FEATURES

Apices are pyramidal, with incurved trichoblasts. Pericentral cells corticated densely, central axial cells usually evident. In older axes, central axial filaments may be surrounded by small-celled adventitious filaments.

## DISTRIBUTION

### HAWAI'I

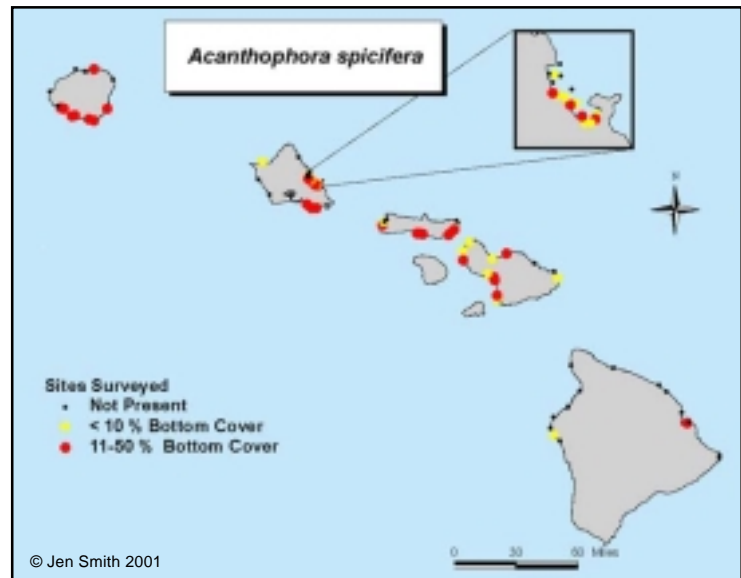
Well established on Maui, Moloka'i, Lana'i, Kaho'olawe, O'ahu, and Kaua'i. Recently identified on Hawai'i Island.

### WORLDWIDE

*Acanthophora spicifera* has a nearly continuous distribution in all the tropical and subtropical seas of the world.

### MECHANISM OF INTRODUCTION

Unintentional introduction from Guam.



## ECOLOGY/IMPACT

*Acanthophora spicifera* is the most widespread and successful alien alga in Hawai'i. It appeared for the first time in Hawai'i in the early 1950's, most likely entering on a barge from Guam. The red alga is found on reefs and intertidal habitats. This alga's plastic morphology has allowed it to adapt to different conditions and invade a diversity of habitats. The brittle nature of the branches often results in fragmentation, which contributes to frequent, large free-floating populations and widespread distribution.

*A. spicifera* benefits from association with aggregates of other algal species that are more tolerant of wave exposure and are able to retain water when exposed to air. It is often found growing next to and competing with the native species of *Laurencia* and *Hypnea cervicornis*. *H. cervicornis* may even entangle in the upper branches of *A. spicifera* as an epiphyte.

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Magruder, W.H. and J. Hunt, 1979. *Seaweeds of Hawai'i*. Oriental Publ. Co., Honolulu, Hawai'i.

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## WEB PAGES

Ecological Success of Alien/Invasive Algae in Hawai'i. <http://www.botany.hawaii.edu/GradStud/smith/websites/ALIEN-HOME.htm>

Marine Invasives in Hawai'i. <http://www.botany.hawaii.edu/Invasive/default.htm>

The Indian River Lagoon Species Inventory. <http://www.serc.si.edu/sms/IRLSpec/index.htm>